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10/750,072	12/31/2003	Shen-Kan Hsiung	TW-APA-0647	3222

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EXAMINER
WONG, EDNA

ART UNIT	PAPER NUMBER
1795	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/750,072	HSIUNG ET AL.	
	Examiner	Art Unit	
	EDNA WONG	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 June 2008 and 28 June 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

This is in response to the Amendments dated June 6, 2008 and June 28, 2008, 2008. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.

Response to Arguments

Claim Objections

Claims **1 and 5** have been objected to because of minor informalities.

The objection of claims 1 and 5 has been withdrawn in view of Applicants' amendment.

Claim Rejections - 35 USC § 112

I. Claims **1 and 3-5** have been rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

With regards to ***claims 3-5***, the rejection under 35 U.S.C. 112, first paragraph, has been withdrawn in view of Applicants' amendment. Claims 3-5 have been cancelled.

With regards to ***claim 1***, the rejection under 35 U.S.C. 112, first paragraph, is as applied in the Office Action dated February 14, 2008 and incorporated herein. The

rejection has been maintained for the following reasons:

Claim 1

line 7, recites "***positioning*** the device".

Applicants state that the specification discloses, line 7 page 13 of the specifications, "***routing*** the device". The claim 1 claimed "positioning the device" according to the disclosure.

In response, the definitions are:

"positioning" - to put in a certain position.

"routing" - to divert in a specified direction.

The definition of the word "positioning" is broader than the definition of the word "routing", and thus, the word "positioning" does not necessarily mean diverting in a specified direction.

Applicants state that it is well known to one skilled in the art, or even it is a common knowledge to one who is not skilled in the art, *that after routing an object the object has to be positioned*.

In response, the claims as presently written does not recite routing the device. Thus, there is no corresponding positioning of that route.

II. Claims **1 and 3-5** have been rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject

matter which applicant regards as the invention.

With regards to ***claim 1, lines 2, 9-10 and 12; and claims 3-5***, the rejection under 35 U.S.C. 112, second paragraph, has been withdrawn in view of Applicants' amendment. Claims 3-5 have been cancelled.

With regards to ***claim 1, lines 7, 10, 21, 24 and 26-27*** (formerly claim 1, lines 6, 9, 20, 22 and 25-26), the rejection under 35 U.S.C. 112, second paragraph, is as applied in the Office Action dated February 14, 2008 and incorporated herein. The rejection has been maintained for the following reasons:

Claim 1

• line 7, recites "positioning the device". It is unclear how the device is positioned in step 3 when the device is not fabricated until step 5 (claim 1, lines 11-12).

• line 10, recites "immersing the device into an electro-polymerizing solution". It is unclear how the device is immersed into the electro-polymerizing solution in step 5 (claim 1, line 10) when the device is not fabricated until after electro-polymerizing the polypyrrole (claim 1, lines 11-12).

• line 21, recites "*immersing the substrate* into said electro-polymerizing solution". Claim 1, line 10, recites "*immersing the device* into an electro-polymerizing solution". It is unclear from the claim language what is immersed into the electro-polymerizing solution.

• line 24, recites "a polypyrrole *sensor*". Step A recites "a finished conductive substrate" and step D recites "said polypyrrole polymerized on said substrate". Steps A to D do not recite a polypyrrole sensor, thus, where did this come from?

• line 26, recites "said sensing device".

From step E "a polypyrrole sensor" was immersed into de-ionized water for ten minutes. Then in step F, said sensing device was removed and dried.

It is unclear how a polypyrrole sensor was immersed in de-ionized water and then the sensing device was removed from it and dried.

• lines 26-27, recites "thus completing fabrication *of the polypyrrole sensor*".

Claim 1, lines 11-12, recites "thus completing the fabrication *of the whole solid-state pH sensing device*".

It is unclear from the claim language what is being completed.

III. Claims **1 and 3-5** are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01.

With regards to ***claims 3-5***, the rejection under 35 U.S.C. 112, second paragraph, has been withdrawn in view of Applicants' amendment. Claims 3-5 have

been cancelled.

With regards to ***claim 1***, the rejection under 35 U.S.C. 112, second paragraph, is as applied in the Office Action dated February 14, 2008 and incorporated herein. The rejection has been maintained for the following reasons:

Claim 1

• line 6, recites "positioning the device".

It is unclear from the claim language how the substrate recited in steps 1 and 2 changes into the device to be positioned in step 3.

• line 15, recites "preparing a finished conductive substrate".

Steps 1 and 2 (claim 1, lines 4-6) recites the *substrate*.

Step 3 (claim 1, line 7) recites the *device*.

Step 5 (claim 1, line 10) recites immersing the *device* into an electro-polymerizing solution.

Step D (claim 1, line 21), recites immersing the *(finished conductive) substrate* into said electro-polymerizing solution.

It is unclear from the claim language when the appropriate substrate changed into the finished conductive substrate; when the finished conductive substrate changed into the device; when the device changed into the polypyrrole sensor; and when the polypyrrole sensor change into the whole solid-state pH sensing device.

• lines 24-25, recites "immersing *a polypyrrole sensor* into de-ionized water for ten (10) minutes to clean said polypyrrole sensor".

The polypyrrole sensor does not further limit any element recited in steps 1-5 and steps A-D. Thus, it is unclear what the structural relationship is between the polypyrrole sensor and the element recited in steps 1-5 and steps A-D. Where did the polypyrrole sensor come from?

Claim Rejections - 35 USC § 103

Claims **1 and 3-5** have been rejected under 35 U.S.C. 103(a) as being unpatentable over **JP 2590004** ('004) in combination with **Jasne** (US Patent No. 4,724,053), **Canham et al.** (US Patent Application Publication No. 2005/0266045 A1), **Zier et al.** (US Patent No. 4,919,141), **Koopal et al.** (US Patent No. 5,422,246) and **Gray et al.** (US Patent No. 3,929,609).

The rejection of claims 1 and 3-5 under 35 U.S.C. 103(a) as being unpatentable over JP 2590004 ('004) in combination with Jasne, Canham et al., Zier et al., Koopal et al. and Gray et al. has been withdrawn in view of Applicants' amendment.

Response to Amendment

Claim Objections

Claim **1** is objected to because of the following informalities:

Claim 1

line 25, the word -- and -- should be inserted after the word “sensor;”.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

Claim **1** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1

• line 11, recites “electro-polymerizing the polypyrrole”. The claim language is unclear as to how polypyrrole is elector-polymerized when the step of electro-polymerizing uses an electro-polymerizing solution comprising *the monomer* of polypyrrole (step C: claim 1, lines 17-18).

• line 11, recite “electro-polymerizing the polypyrrole”.

line 13, recites “electro-polymerizing the polypyrrole”.

line 23, recites “said polypyrrole polymerized”.

Claim 1, lines 17-18, recite “preparing said electro-polymerizing solution, which comprises a buffer solution, electrolytes, and *the monomer of polypyrrole*”.

If the monomer of polypyrrole is in the electro-polymerizing solution, it is unclear from the claim language how the monomer of polypyrrole in the electro-polymerizing

solution is not electro-polymerized.

• lines 17-18, recite "preparing said electro-polymerizing solution, which *comprises* a buffer solution, electrolytes, and the monomer of polypyrrole".

line 32, "said polymerizing solution *comprises* a buffer solution, salts, and polypyrrole".

lines 32-33, "the polymerizing solution *comprising* a phosphate solution, potassium chloride, and polypyrrole".

The electro-polymerizing solution comprises three separate and independent compositions. It is unclear form the claim language what the electro-polymerizing solution comprises and/or further comprises.

• line 32, it appears that "a buffer solution" is the same as the buffer solution recited in claim 1, lines 17-18. However, it is unclear from the claim language whether it is. If it is not, then what is the difference/ relationship between the two?

• line 32, it appears that the "salts" are the same as the electrolytes recited in claim 1, line 18. However, it is unclear from the claim language whether they are. If they are not, then what is the difference/ relationship between the salts and the electrolytes.

• line 32, recite "polypyrrole". Does the electro-polymerizing solution comprise

both polypyrrole and the monomer of polypyrrole (from claim 1, line 18)?

• line 34, it appears that the "polypyrrole" is the same as the polypyrrole recited in claim 1, line 32. However, it is unclear from the claim language whether it is. If it is not, then what is the difference/ relationship between the two?

• lines 35-37, recite "wherein the process is applied to *fabricate a sensing electrode* with an appropriate sensitivity and the control of the sensitivity of *a differential pair pH sensing device is obtained*".

Claim 1, lines 1-2, recite "A process for *fabricating a whole solid-state pH sensing device* by using polypyrrole as a contrast pH detector."

It is unclear from the claim language what the present process fabricates.

Claim Rejections - 35 USC § 103

Claim **1** is rejected under 35 U.S.C. 103(a) as being unpatentable over **JP 2590004** ('004) in combination with **Jasne** (US Patent No. 4,724,053), **Canham et al.** (US Patent Application Publication No. 2005/0266045 A1), **Zier et al.** (US Patent No. 4,919,141), **Koopal et al.** (US Patent No. 5,422,246) and **Gray et al.** (US Patent No. 3,929,609).

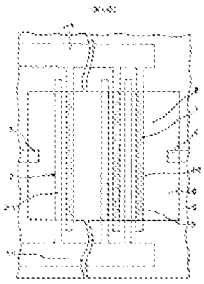
JP '004 teaches a process for fabricating a whole solid-state pH sensing device by using polypyrrole as a contrast pH detector, said process comprising the following

steps:

step 1: selecting an appropriate substrate **6** (= a silicon substrate);

step 2: depositing a solid-state sensing material (= an oxide film) on said substrate **6**;

step 3: positioning the device **1-1, 2-1** (= lead parts);

step 4: using an insulating film **5** to seal the material and fixing a sensing window area **1, 2** (= the comb-form electrode is covered with oxidation-reduction products of catalysis **9**; and Fig. 1: ); and

step 5: immersing the device into an electro-polymerizing solution (= the substrate is immersed in an aqueous solution of glucose oxidase and pyrrole), and electro-polymerizing the polypyrrole **9** (= by which a polymerized pyrrole film containing the glucose oxidase is deposited), for completing the fabrication of the whole solid-state pH sensing device (abstracts; and Figs. 1-2),

wherein the step of electro-polymerizing the polypyrrole comprises the following steps:

step A: preparing a finished conductive substrate **6** (= steps 1-4 above prepares a solid-state sensing material/ oxide film/ silicon substrate);

step C: preparing said electro-polymerizing solution, which comprises the

monomer of polypyrrole (= an aqueous solution of glucose oxidase and *pyrrole*); and

step D: connecting the substrate **6** to the positive electrode of the power supply and connecting an electrode to a negative electrode of the power supply, and immersing the substrate into said electro-polymerizing solution, where the power supply provides a constant potential in a manner that said polypyrrole can be polymerized on said substrate (= from the electrolytic polymerization by which a polymerized pyrrole film **9** containing the glucose oxidase is deposited; and Jasne: col. 8, line 59 to col. 10, line 9); and immersing the substrate into said electro-polymerizing solution (= the substrate is immersed in an aqueous solution of glucose oxidase and pyrrole), wherein the power supply provides a potential in a manner that said polypyrrole polymerized on said substrate (= from the electrolytic polymerization by which a polymerized pyrrole film **9** containing the glucose oxidase is deposited) [abstracts; and Figs. 1-2].

The solid-state substrate is selected from the group consisting of a silicon substrate, a glass substrate, a ceramic substrate and a plastic substrate (= a silicon substrate) [abstracts].

The sensing material is selected from the group consisting of a tin dioxide membrane or other solid-state conductive ion-sensing membrane (= an oxide film) [abstracts].

The method of JP '004 differs from the instant invention because JP '004 does not disclose the following:

a. Preparing various solid-state substrates, as recited in claim 1.

JP '004 teaches a microelectrode cell comprising a silicon substrate (abstracts).

Like JP '004, Canham teaches a microelectrode device comprising a silicon substrate. *Canham teaches that the microelectrode device may be adapted for operation in or on the surface of a living human or animal body, or in vitro*. Commercial biomedical microelectrodes often use porous coatings to improve tissue integration and thereby lower interfacial impedance. Such porous coatings however need to remain conductive and have excellent corrosion resistance when under electrical bias. Underivatized porous silicon microelectrodes would undergo significant corrosion in most physiological conditions of pH greater than 7, e.g. soft tissue, bone, muscle and blood. The application of electrical bias to the electrodes, corresponding to a positive surface charge, would accelerate this degradation. The impedance would rise with time and the ac drift would also be unacceptable. Using derivatized porous silicon in the manufacture of microelectrode devices seeks to alleviate these problems (pages 3-4, [0031] and [0032]).

Canham teaches preparing various solid-state substrates:

a biofiltration device comprising derivatized porous silicon (page 1, [0010]);

an immunoisolation device comprising derivatized porous silicon (page 1, [0013]);

a battery device comprising derivatized porous silicon (page , [0015]);

an optical device comprising derivatized porous silicon (page 1, [0020]); and

a cardiovascular device comprising derivatized porous silicon (page 1, [0028]).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process described by JP '004 by preparing various solid-state substrates because preparing various solid-state substrates would have depended upon the intended use of the device, particularly to the environment to which the device will encounter, which would be most suited for the application of the device as taught by Canham (page 1, [0010] and [0013]; page 2, [0015] and [0020]; page 3, [0028]; and pages 3-4, [0031] and [0032]).

b. Wherein *the selecting* of the appropriate substrate is *based on* the solid-state sensing material and a sensing environment, as recited in claim 1.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the selecting of the appropriate substrate described by JP '004 with wherein the selecting of the appropriate substrate is based on the solid-state sensing material and a sensing environment because the Applicant has a

different reason for, or advantage resulting from doing what the prior art relied upon has suggested, it is noted that it is well settled that this is not demonstrative of nonobviousness. *In re Kronig* 190 USPQ 425, 428 (CCPA 1976); *In re Linter* 173 USPQ 560 (CCPA 1972); the prior art motivation or advantage may be different than that of Applicants while still supporting a conclusion of obviousness. *In re Wiseman* 201 USPQ 658 (CCPA 1979); *Ex parte Obiaya* 227 USPQ 58 (Bd. of App. 1985) and MPEP § 2144.

c. Wherein the insulating film comprises an epoxy resin, as recited in claim 1.

JP '004 teaches an insulating film **5** (abstracts; and Figs. 1-2).

Like JP '004, Zier teaches a sensing device. Zier teaches that the electrodes are embedded in an insulating epoxy resin filler **12** (col. 6, lines 61-66; and Figs. 1-3).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the insulating film described by JP '004 with wherein the insulating film comprises an epoxy resin because embedding electrodes in an insulating epoxy resin filler is a conventional construction of a sensing device as taught by Zier (col. 6, lines 61-66; and Figs. 1-3).

Furthermore, one having ordinary skill in the art would have known to isolate the electrodes from each other otherwise they would short circuit.

d. *Step B*: *cleaning* the substrate, as recited in claim 1

e. *Step E*: immersing a polypyrrole sensor into the de-ionized water for ten (10) minutes *to clean* said polypyrrole sensor, as recited in claim 1.

Like JP '004, Gray teaches using a sensing device. Gray teaches that the electrodes were pretreated by immersing in a dichromate-sulfuric acid cleaning solution for several seconds and rinsing three times with doubly distilled water prior to immersion in the test solution (col. 6, lines 25-28).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process described by JP '004 by cleaning the substrate immersing; and immersing a polypyrrole sensor into the de-ionized water to clean said polypyrrole sensor because rinsing three times with doubly distilled water prior to immersion in a test solution is a conventional rinse treatment of electrodes as taught by Gray (col. 6, lines 25-28).

As to the claim limitation of "for ten (10) minutes", the cleaning time is a result-effective variable and one skilled in the art has the skill to calculate the cleaning time that would have determined the success of the desired reaction to occur, i.e., cleaning (MPEP § 2141.03 and § 2144.05(II)(B)).

Furthermore, the cleaning time is not a patentable modification; however, such changes may impart patentability to a process if the range claimed produce new and unexpected results which are different in kind and not merely in degree from results of the prior art, such ranges are termed "critical" ranges and Applicant has the burden of

proving such criticality; even though Applicants' modification results in great improvement and utility over the prior art, it may still not be patentable if the modification was within capabilities of one skilled in the art; more particularly, where general conditions of the claim are disclosed in the prior art, it is not inventive to discover optimum or workable ranges by routine experimentation. *In re Aller*, 220 F2d 454, 456, 105 USPQ 233, 235 (CCPA 1955) and MPEP § 2144.05.

f. Wherein in step C: said electro-polymerizing solution comprises a buffer solution and electrolytes, as recited in claim 1.

g. Wherein said polymerizing solution comprises a buffer solution, salts and polypyrrole; the polymerizing solution comprising *a phosphate solution*, *potassium chloride* and *polypyrrole*;

wherein, through changing the composition of said polymerizing solution, the control of the sensitivity of said polypyrrole sensor is achieved, and wherein the process is applied to fabricate a sensing electrode with an appropriate sensitivity and the control of the sensitivity of a differential pair of pH sensing device is obtained, as recited in claim 1.

JP '004 teaches an aqueous solution of glucose oxidase and pyrrole to effect an electrolytic polymerization (abstracts).

Like JP '004, Koopal teaches fabricating a sensing device. Koopal teaches that an aqueous solution containing 0.9% *potassium chloride* and 10 mM phosphate (*PBS*),

together with 0.3 M *pyrrole* was used in the polymerization reaction (col. 12, lines 58-61).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the said polymerizing solution described by JP '004 with wherein said electro-polymerizing solution comprises a buffer solution and electrolytes; and wherein said polymerizing solution comprises a buffer solution, salts and polypyrrole; the polymerizing solution comprising a phosphate solution, potassium chloride and polypyrrole because a solution comprising a phosphate solution, potassium chloride and polypyrrole would have been conventionally used as an electrolyte for electrodepositing a film of polypyrrole as taught by Koopal (col. 12, lines 58-61).

Furthermore, it has been held that the selection of a known material based on its suitability for its intended use supports a prima facie obviousness determination (MPEP §§ 2144.06 and 2144.07).

Furthermore, it is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose. The idea of combining them flows logically from their having been individually taught in the prior art (MPEP § 2144.06 and § 2144.07).

As to wherein, through changing the composition of said polymerizing solution, *the control of the sensitivity* of said polypyrrole sensor is achieved, and wherein the process *is applied to fabricate* a sensing electrode with an appropriate sensitivity and

the control of the sensitivity of a differential pair of pH sensing device *is obtained*, the reason or motivation to modify the reference may often suggest what the inventor has done, but for a different purpose or to solve a different problem. It is not necessary that the prior art suggest the combination to achieve the same advantage or result discovered by the Applicants. *In re Linter* 458 F.2d 1013, 173 USPQ 560 (CCPA 1972); *In re Dillon* 919 F.2d 688, 16 USPQ2d 1897 (Fed. Cir. 1990), *cert. denied*, 500 US 904 (1991); and MPEP § 2144.

h. Wherein the electrode connected to a negative electrode of the power supply is a platinum electrode, and where the power supply provides a constant potential which is higher than the oxidizing potential of said polypyrrole, as recited in claim 1.

Koopal teaches that a platinum plate acted as a counter electrode in the polymerization reaction (col. 12, lines 66-67).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the power supply described by JP '004 with wherein where the power supply provides a constant potential which is higher than the oxidizing potential of said polypyrrole because Jasne teaches that the reaction conditions of the electropolymerization will vary with the nature of the polymerizable monomer and the solvent. In the case of a preferred monomer (pyrrole) in a preferred solvent (water), electropolymerization can be initiated by *raising the potential* of the

working electrode (against a silver/silver nitrate reference electrode) *to about +0.75 volt* or can be performed galvanostatically at a predetermined current density. The current or voltage can be increased or decreased or *be held at a fixed amperage or voltage* sufficient to permit initiation and completion of the desired electropolymerization (col. 8, line 59 to col. 9, line 2).

i. *Step F*: removing and drying said sensing device, thus completing the fabrication of the polypyrrole sensor, as recited in claim 1.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the method described by JP '004 by removing and drying said sensing device, thus completing the fabrication of the polypyrrole sensor because one having ordinary skill in the art would have had the common sense to have removed and dried the polypyrrole sensor because (i) the polypyrrole sensor would not have been used while it was immersed into the de-ionized water and (ii) the polypyrrole sensor would not have been used while wet with the de-ionized water.

RE: REMARKS

Applicants state that the Examiner cited six (6) prior arts in combination for the rejections. It is obvious that the current invention is non-obvious in view of the combinations of six (6) prior arts.

In response, reliance on a large number of references in a rejection does not,

without more, weigh against the obviousness of the claimed invention. See *In re Gorman*, 933 F.2d 982, 18 USPQ2d 1885 (Fed. Cir. 1991).

Applicants state that the claim 1 claimed "immersing a polypyrrole sensor into de-ionized water for ten (10) minutes to clean said polypyrrole sensor". The cited prior arts failed to teach the specific limitation as claimed.

In response, this is a newly added limitation to claim 1 which is addressed as discussed above.

There is no requirement that the claim limitation be expressly articulated in one or more of the references. The teaching, suggestion or inference can be found not only in the references but also from knowledge generally available to one of ordinary skill in the art. *Ashland Oil v. Delta Resins* 227 USPQ 657 (CAFC 1985). References are evaluated by what they collectively suggest to one versed in the art, rather than by their specific disclosures. *In re Simon* 174 USPQ 114 (CCPA 1972); *In re Richman* 165 USPQ 509, 514 (CCPA 1970).

Applicants state that the prior arts JP2590004B2, US5422246 and US3929609 implement devices with a working electrode, a reference electrode, and a counter electrode that are sensors for sensing based on electric current flow and require the oxidization processes. *The current invention implements a device as a sensor based on the changes of electric voltages that is compatible with the process of semiconductor*

manufacturing MOSFET.

In response, a device implemented as a sensor based on the changes of electric voltages that is compatible with the process of semiconductor manufacturing MOSFET does not distinguish the method (for fabricating) from the prior art. In method claims, it is the overall method steps that are given patentable weight.

It is well settled that unpatented claims are given the broadest, most reasonable interpretation and that limitations are not read into the claims without a proper claim basis therefor. *In re Prater* 415 F. 2d 1393, 162 USPQ 541 (CCPA 1969); *In re Zeltz* 893 F. 2d 319, 13 USPQ 1320.

Applicants state that the prior art US2005/0266045 *implements optical signals while the current invention implements voltage signals*.

In response, implementing optical signals versus implementing voltage signals does not distinguish the method (for fabricating) from the prior art. In method claims, it is the overall method steps that are given patentable weight.

It is well settled that unpatented claims are given the broadest, most reasonable interpretation and that limitations are not read into the claims without a proper claim basis therefor. *In re Prater* 415 F. 2d 1393, 162 USPQ 541 (CCPA 1969); *In re Zeltz* 893 F. 2d 319, 13 USPQ 1320.

Applicants state that the prior art US4919141 implements two separate working

electrode and reference electrode. The current invention implements both electrodes on one substrate.

In response, the rejection is not overcome by pointing out that one reference does not contain a particular limitation when reliance for that teaching is on another reference. *In re Lyons* 150 USPQ 741 (CCPA 1966). Moreover, it is well settled that one cannot show nonobviousness by attacking the references individually where, as here, the rejection is based on a combination of references. *In re Keller* 208 USPQ 871 (CCPA 1981); *In re Young* 159 USPQ 725 (CCPA 1968).

Applicants state that the cited prior art US4724053 discloses a technology of electropolymerized conductive polymer. The current invention discloses a pH sensing device.

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Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to EDNA WONG whose telephone number is (571) 272-1349. The examiner can normally be reached on Mon-Fri 7:30 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Edna Wong/
Primary Examiner
Art Unit 1795

EW
August 17, 2008